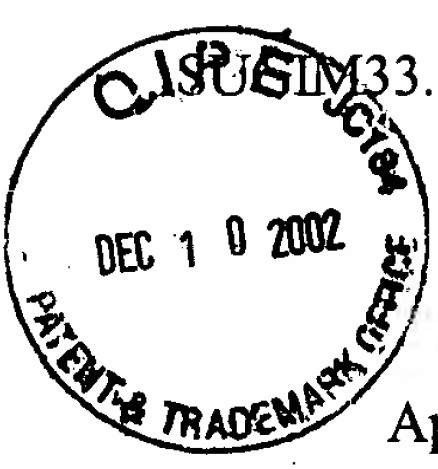


8 12/24/01

PATENT



33.001AUS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Mukasa, et al.) Group Art Unit 1725
Appl. No. : 09/851,261)
Filed : May 8, 2001)
For : A LASER WELDING HEAD-)
CONTROLLING SYSTEM,)
A LASER WELDING HEAD)
AND A METHOD FOR)
CONTROLLING A LASER)
WELDING HEAD)
Examiner : L. Tran)

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TC 1700

RESPONSE TO THE OFFICE ACTION

United States Patent Office and Trademark
P.O. Box 2327
Arlington, VA 22202

Dear Sir:

This is in response to the Office Action mailed October 2, 2002 (Paper number 7). Applicants respectfully request reconsideration of the application in view of the following remarks.

Rejection of Claim 3 Under 35 U.S.C. § 102 Based on Iwai

Claim 3 has been rejected under 35 U.S.C. § 102(b) as being anticipated by Iwai (US 5,533,146).

The Examiner states that Iwai teaches irradiating plural linear laser beams for parts to be welded. In Iwai, however, the linear laser beams are utilized to join together the metal sheets by the weld line. That is, in Iwai, the welding process is performed by using the laser beams (See column 2, lines 27-29).

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In contrast, in the present invention, the semiconductor laser apparatus is provided in addition to the YAG laser. The latter YAG laser is utilized to perform the welding process, and the former semiconductor laser apparatus is utilized to monitor the welding state (See [description of Preferred Embodiment]).

In Iwai, the illustrated laser corresponds to the YAG laser because both are utilized to perform the welding process. In Iwai, however, any laser system is not shown which corresponds to the semiconductor laser apparatus of the present invention. Therefore, Iwai does not teach or suggest the step of irradiating plural linear laser beams for parts to be welded, taking images of the welding state by the reflected linear laser beams.

Thus, Claim 3 could not be anticipated by Iwai. Applicants respectfully request withdrawal of this rejection.

Rejection of Claims 1, 2 and 4-11 Under 35 U.S.C. § 103

Claims 1, 2, 7, 9 and 10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwai (US '146) and further in view of JP 2000042769.

Claims 4-6, 8 and 11 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwai (US '146) and further in view of JP 2000042769 in view of Anderson et al. (US 5,938,446).

The Examiner asserts that although Iwai fails to disclose a CCD camera with a band pass filter, a condenser, and a processor using CAD data, JP '769 discloses the method of using a CCD camera with a band pass filter, a condenser for the purpose of which condenses the light emitted from a weld zone as becomes the optical axis and the same axle of a laser beam which is irradiated by the work is formed. Further, the Examiner asserts that although Iwai fails to teach using CAD for control welding, Anderson et al. is introduced to show the importance of CAD for read-off data which is input to a CAD program.

As discussed above, Iwai does not teach or suggest the step of irradiating plural linear laser beams for parts to be welded, taking images of the welding state by the reflected linear laser beams and is quite different from the present invention. None of the remaining references does not teach or suggest the above significant features. In addition, JP '769 discloses a CCD camera,

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however does not teach or suggest the CCD camera with a band-pass filter therein to pass through only the reflected linear laser beams. Moreover, Anderson et al. teach CAD system, however does not teach or suggest to apply the CAD system to the welding system and the welding method.

Thus, a combination of the above references still could not lead to the present invention. Applicants respectfully request withdrawal of this rejection.

CONCLUSION

In light of the Applicants' foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

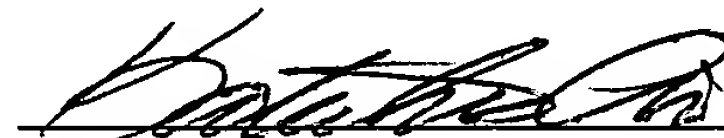
Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: December 6, 2002

By:



Katsuhiro Arai

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